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EXAMINER	
KARPINSKI, LUKE E	

ART UNIT	PAPER NUMBER
1616	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/709,122	ANDERSON ET AL.	
	Examiner	Art Unit	
	LUKE E. KARPINSKI	1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34 and 44-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-34 and 44-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/02/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/02/2008 has been entered.

Claims

Claims 35-43 have been canceled.

Claims 1-34 and 44-47 are currently pending and under consideration in this action.

Rejections

Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

It is noted that the rejection of claim 25 under 112 second paragraph in the office action filed 5/30/2008 was a typographical error, the rejection was on claims 16, 20, 22, 24, **AND** 26; not 24-26.

Previous Rejections

1. Claims 1-19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,050,990 to Tankovich et al. in view of US Patent No. 5,709,654 to Klatz et al.

Applicant Claims

Applicant claims a method for protecting epithelial tissue during hair removal utilizing photodynamic therapy induced using a pre-photosensitizing agent. The method comprising: administering said pre-photosensitizing agent, preventing the metabolism of the pre-photosensitizing agent into a photosensitizing agent while still allowing the metabolism to occur at the desired treatment site, and irradiating the treatment site wherein the tissue surrounding the treatment site is substantially unaffected. Applicant claims the prevention of the metabolism is due to a temperature gradient between the treatment site and the surrounding tissue, which is due to either cooling the surrounding tissue, heating the treatment site, or both. Applicant claims different skin conditions that can be treated, different temperature ranges, and energy sources.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Tankovich et al. teach methods for protecting epithelial tissue using temperature control (col. 64, lines 58-67) as claimed in claim 1; topical application of aminolevulinic (ALA) acid for use in photodynamic therapy (col. 39, lines 58-66) as claimed in claim 33; creating a temperature gradient between epithelial tissue and a targeted treatment site

(col. 63, lines 59-61 and col. 64, lines 58-67) as claimed in claim 2; creating the gradient by cooling the skin prior to irradiation and irradiating with a laser (col. 64, lines 58-67) as claimed in claims 3, 4, and 11; cooling the skin with a device containing a cooling medium, wherein the device includes a radiant energy source and at least one portion of the device is transparent, the device is couple to a light source and the cooling and irradiation take place concurrently (col. 18, lines 12-24 and col. 19, lines 38-46) as claimed in claims 5, 6, 7, 8, 10, and 11; epithelial tissue being cooled to a temperature that differs from that of the targeted treatment site by at least 5ºC, wherein the epithelial tissue is cooled to equal to or less than 25ºC and about 20ºC to –5ºC and the temperature gradient is created through the cooling the tissue surrounding the treatment site and heating the treatment site (col. 3, lines 40-56) as claimed in claims 12, 13, 14, ; and the tissue at the treatment site being heated to equal to or greater than 25ºC and in the range of about 25C to 40C with a radiant energy source of light (col. 3, lines 40-54) as claimed in claims 16, and 17; and controlling tissue damage during photodynamic therapy using a chromophore to affect hair and hair ducts with skin cooling (abstract).

Ascertainment of the Difference between Scope the Prior Art and the Claims (MPEP §2141.012)

Tankovich et al. do not teach preventing the metabolism of pre-photosensitizing agent through cooling, as claimed in claim 1. This deficiency in Tankovich et al. is cured by Klatz et al. Klatz et al. teach cooling the body sufficiently will inhibit metabolism and the production of free radicals, which cause tissue damage, will decrease (col. 4, lines 59-65 and col. 12, lines 62-65).

Further, Tankovich et al. do not teach the cooling medium as a solid, liquid, or gas, as claimed in claim 6. However, it is common sense that a cooling medium would have to be one of the 3 forms of matter known to man. It is also common sense that one could use any or all of the forms of matter for the use of cooling something.

Tankovich et al. also do not teach removing the contact device from the skin before the step of irradiating. However, it would have been common sense to one of ordinary skill in the art to remove any device from between an area to be irradiated and the irradiation source.

Tankovich et al. also do not teach using microwave energy, ultrasound, or radiofrequency energy as the radiation source. However, it is well known that one can use visible light, infrared light, microwave energy, ultrasound, or radiofrequency energy to transfer heat.

Finding of Prima Facie Obviousness Rational and Motivation

(MPEP §2142-2143)

Regarding claim 1, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to combine the methods of Tankovich et al. with preventing metabolism, as taught by Klatz et al. in order to produce the invention of instant claim 1.

One of ordinary skill in the art would have been motivated to do this because Tankovich et al. teach protecting skin through various methods, including cooling, and Klatz et al. teach that cooling tissue helps to protect it through lowering metabolism and

slowing free radical production. Although Tankovich et al. does not teach cooling a treatment area to prevent metabolism of a protoporphyrin precursor to a protoporphyrin it would have been obvious to a skilled artisan that to combine methods of photodynamic therapy which embrace using aminolevulinic acid with the knowledge that cooling the body down slows the process of metabolism. It was well known at the time of the invention that the body naturally metabolizes aminolevulinic acid into a protoporphyrin, and that metabolism is slowed down with lower temperatures. It was also well known at the time of the invention that irradiation of a protoporphyrin causes tissue damage but that irradiation of aminolevulinic acid does not cause tissue damage. A skilled artisan would have recognized that it would be possible to prevent unwanted tissue damage by simply cooling the area surrounding the treatment site to prevent the metabolism of aminolevulinic acid into a photosensitive compound before irradiating the area intended for treatment.

Therefore it would have been obvious to utilize the metabolism slowing/free radical lowering methods of Klatz et al., with the tissue protection methods of Tankovich et al. in order to practice the invention of instant claim 1.

In regards to removing the contact device from the skin before the irradiating step; It would have been common sense to one of ordinary skill in the art to remove any device from between an area to be irradiated and the irradiation source.

In regards to using microwave energy, ultrasound, or radiofrequency energy as the radiation source; It would have been obvious to a skilled artisan that any of these forms of radiant energy could be used for the purpose of heating tissue. It is well known

that one can use visible light, infrared light, microwave energy, ultrasound, or radiofrequency energy to transfer heat. It would have been obvious to a skilled artisan to use any safe available heat source to heat tissue.

The motivation to combine the references is in the fact that both references are in the same field of endeavor, which is to protect tissue from damage through temperature control of tissue. There was also a reasonable expectation of success in combining the references due to the fact that one reference teaches a photodynamic treatment, which was well known at the time and the other reference simply teaches the effect of temperature on the metabolism of aminolevulinic acid.

From the teachings of the reference, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

2. Claims 1, 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,050,990 to Tankovich et al. in view of US Patent No. 5,709,654 to Klatz et al. as applied to claim 1 above, in further view of US Patent No. 5,955,490 to Kennedy et al.

Applicant Claims

Applicant claims all of the limitations recited above in the instant office action as well as the targeted treatment site comprising of malignant cells or sebaceous glands.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Tankovich et al. and Klatz et al. disclose all of the limitations recited above in the instant office action in addition to the use of a laser for the methods disclosed by Tankovich et al.

Ascertainment of the Difference Between Scope the Prior Art and the Claims (MPEP §2141.012)

Neither Tankovich et al. nor Klatz et al. teach the treatment site comprising of malignant cells or sebaceous glands.

Kennedy et al. cures the deficiency of Tankovich et al. And Klatz et al. through teaching that photodynamic therapy can be used to treat malignant cells (col. 4, lines 63-64) as well as sebaceous glands (col. 18, lines 3-9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Tankovich et al., Klatz et al., and Kennedy et al. to use the methods disclosed in Tankovich et al. to treat malignant cells as well as sebaceous glands.

Finding of Prima Facie Obviousness Rational and Motivation **(MPEP §2142-2143)**

The deficiencies of Tankovich et al. and Klatz et al. are overcome by Kennedy et al. because all references are in the field of photodynamic therapy and even though Tankovich et al. and Klatz et al. do not teach the treatment of malignant cells or sebaceous glands Kennedy et al. teaches that photodynamic therapy was know to be used for the treatment of malignant cells and sebaceous glands.

The motivation to combine Tankovich et al. and Klatz et al. with Kennedy et al. is in the fact that both references are in the same field of endeavor, which is using photodynamic therapy for the use in treating skin conditions. They both also teach using aminolevulinic acid as a pre-photosensitizing agent with which to treat said skin conditions. The motivation to combine Tankovich et al. with Klatz et al. is discussed above. There was a reasonable expectation of success at the time to combine the teachings of Tankovich et al., Klatz et al., and Kennedy et al. because Kennedy et al. does nothing more than teach different types of skin conditions that may be treated with the disclosed method and the type of site has no bearing on the fact that the method causes tissue damage to the targeted site.

3. Claims 23, and 25-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,050,990 to Tankovich et al. in view of US Patent No. 5,709,654 to Klatz et al. as applied to claim 1 above, and further in view of US Patent No. 5,114,973 to Hess et al. and US Patent No. 5,955,490 to Kennedy et al.

Applicant Claims

Applicant claims all of the limitations recited above in the instant office action as well as a chemical inhibitor being incorporated into a topical cream at certain percentage amounts and the application of the cream to a patient's skin, simultaneously and at times differing from that of the application of the pre-photosensitizing agent. Applicant also claims a specific pre-photosensitizing agent.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Tankovich et al. and Klatz et al. are delineated above.

Ascertainment of the Difference Between Scope the Prior Art and the Claims (MPEP §2141.012)

Neither Tankovich et al. et al, nor Klatz et al. disclose:

1) Topical application.

2) A chemical inhibitor concentration of greater than 0.1%.

3) The chemical inhibitor within a cream.

4) Application in conjunction with a pre-photosensitizing agent.

5) Aminolevulinic acid at a concentration of at least 0.1%.

6) Applying a chemical inhibitor and cooling the tissue to be treated.

7) The chemical inhibitor application having duration of at least 15 minutes.

8) A chemical inhibitor of the metabolism of a pre-photosensitizing agent.

These deficiencies are cured by the following references or obviated by the teachings of Tankovich et al. together with knowledge commonly known in the art.

Kennedy et al. cures the deficiency of Tankovich et al. through the teaching of aminolevulinic acid at a concentration of at least 0.1% (col. 20, lines 49-54).

Hess et al. cures the deficiency of Tankovich et al. through the teaching of succinylacetone being an inhibitor of the second enzyme of the heme biosynthetic pathway, which is aminolevulinic acid.

Finding of Prima Facie Obviousness Rational and Motivation
(MPEP §2142-2143)

The deficiency in the teachings of Tankovich et al. is cured due to the fact that Kennedy et al. teaches the limitation of a specific concentration for aminolevulinic acid. Even though Kennedy et al. does not teach specifically 0.1%, it is common in the art that experimentation is undertaken in order to optimize the specific concentration of ingredients in a composition. The deficiency of Tankovich not teaching a chemical inhibitor of a pre-photosensitizing agent is cured by Hess et al. simply by the fact that Hess et al. discloses that succinylacetone is an inhibitor of aminolevulinic acid.

It would have been obvious at the time of the invention to combine the teachings of Tankovich et al., Klatz et al., Hess et al., and Kennedy et al. to use a chemical inhibitor to prevent the metabolism of a pre-photosensitizing agent in order to prevent damage to tissue surrounding a site being treated with photodynamic therapy. The

motivation to combine Tankovich et al., Klatz et al., and Kennedy et al. is given above in the instant office action. Any skilled artisan dealing with photodynamic therapy and aminolevulinic acid would have been familiar with the biosynthetic pathway of heme, which is how the body transforms aminolevulinic acid into a photosensitive agent. The motivation to combine Tankovich et al. and Kennedy et al. with Hess et al. is the fact that Tankovich et al. and Kennedy et al. are both in the same field of endeavor, being photodynamic therapy, and Hess et al. teaches inhibitors to aminolevulinic acid, which is a common pre-photosensitizing agent, and is a common compound used in photodynamic therapy as disclosed within Kennedy et al.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use both methods of inhibiting metabolism of a pre-photosensitizing, cooling the tissue and applying a chemical inhibitor, in order to prevent tissue damage. It is common in the medical field to use more than one method of treatment at the same time.

In regards to topical application of a chemical inhibitor within a cream, it would have been obvious to a skilled artisan at the time of the invention to apply the chemical inhibitor directly onto the tissue surrounding the treatment site. It also would have been obvious to apply the inhibitor in the form of a cosmetic cream, for ease of application because creams are conventional forms of topical compositions.

In regards to the concentration of about 0.1%, it would have been obvious to a skilled artisan that to be present in any composition the chemical inhibitor would need to have some concentration value and it is common in the art that experimentation is

undertaken in order to optimize the specific concentration of ingredients in a composition.

In regards to the chemical inhibitor application having duration of at least 15 minutes, it would have been obvious to one of ordinary skill in the art that the irradiation process would take at least 15 minutes and that the chemical inhibitor should remain on the tissue throughout the duration of the irradiation process.

The motivation to combine the teachings of Hess et al. with those of Tankovich et al. and Kennedy et al. is that Hess teaches inhibitors to aminolevulinic acid while the others teach the use of aminolevulinic acid for photodynamic therapy. There would have been a reasonable expectation of success in combining these references due to the fact that Tankovich et al. and Kennedy et al. cover photodynamic therapy methods and Hess et al. covers properties of a pro-drug that is commonly used in the photodynamic therapy art.

Response to Arguments

Applicant's arguments filed 9/02/2008 have been fully considered but they are not persuasive.

Applicant argues that there is no teaching in the references of preventing the metabolism of a pre-photosensitizing agent into a photosensitizing agent while allowing the pre-photosensitizing agent to metabolize into a photosensitizing agent at a targeted treatment site.

This argument is not found persuasive because Tankovich et al. teach cooling the skin to prevent damage during photodynamic therapy. Further, ALA (a photosensitive compound) and it's precursors (pre-photosensitizing agents) are both found naturally in the skin, through the cooling of the upper layers of tissue the methods of Tankovich et al. are necessarily preventing the metabolism of ALA and at the same time allowing said metabolism to take place in the lower layers of tissue by allowing said lower layers to remain at body temperature. The only limitation claimed by the applicant and missing from the method of Tankovich et al. is the application of a pre-photosensitizing agent onto the skin prior to irradiation. This deficiency is cured by an additional method of PDT taught by Tankovich et al. in the very same reference. Tankovich et al. also teach the application of a pre-photosensitizing agent onto skin and allowing said skin to be irradiated by the sun in order to activate the photosensitizing agent. One of ordinary skill in the art would have readily seen that the two methods of PTD could be combined into a single method. The combination of the two methods would incorporate the application of a pre-photsensitizing agent onto skin prior to irradiation and incorporate the cooling step to prevent tissue damage, which would still prevent the metabolism of said pre-photosensitizing agent in the upper layers of skin while allowing the metabolism in said lower layers.

Applicant also argues that Klatz et al. do not cure the deficiencies of Tankovich et al.

In response to applicant's argument that Klatz et al. is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or,

if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Klatz et al. teach to the body's metabolism and techniques for slowing said metabolism to prevent tissue damage. Klatz et al. is utilized in order to show that at the time of the invention it was known in the medical community that lowering the body temperature slowed the body's metabolism and prevented tissue damage. One of ordinary skill would have seen that one could utilize said techniques in order to also slow the metabolism in the skin, which is an organ, and that cooling of the entire skin would not be necessary, that only the cooling of the site that metabolism slowing was desired could be easily achieved.

Applicant also argues that the prior art provides no recognition that a pre-photosensitizing agent can be prevented from metabolizing in the epithelial tissue while pre-photosensitizing agent in the underlying tissue site is metabolized.

The argument is not found persuasive because, as stated above, Tankovich et al. teach cooling the epithelial tissue, while allowing the tissue in the underlying layers to remain at body temperature, for the purpose of preventing tissue damage during PDT. By practicing this method the prevention of a pre-photosensitizing agent is necessarily being performed, as well as allowing the metabolism of said pre-photosensitizing agent into a photosensitizing agent (ALA) in the non-cooled tissue. ALA and its precursors are naturally found in the skin and, as shown by Klatz et al., one of ordinary skill in the

art would have been aware that cooling an area of tissue would slow the natural metabolism in said tissue.

Applicant also argues that the prior art does not teach heating the tissue of the targeted treatment site to 25-40 degrees C.

This argument is not found persuasive because the targeted treatment site of Tankovich et al. is already between 25-40 degrees C (col. 63, last paragraph). Said treatment site is heated to body temperature, which is about 33 degrees C, by the body itself.

Applicant also argues that Tankovich et al. teach heating the treatment to above said temperature range when said site is hit with irradiation and heats to about 70 degrees in order to destroy the desired cells.

This argument is not found persuasive by the combination of the two methods of PDT taught by Tankovich et al. The method of administering ALA does not require that a laser be utilized, thus resulting in the temperature above what is claimed. Through the combination of the two methods, one would have been readily aware that the activation of ALA requires much less energy and that if a laser was utilized in order to target a specific site the amount of energy required from said laser would not be so high that the energy from the laser itself would not heat the skin to 70 degrees.

Applicant also argues that Hess only teaches succinylacetone as an inhibitor to ALA and there is no teaching to apply said compound to the skin in order to prevent ALA to protect epithelial tissue during PDT.

This argument is not found persuasive because one of ordinary skill in the art in the field of photo dynamic therapy is readily aware of the mechanisms which take place in the body during treatment, including which compounds are photosensitive, what their synthetic pathways are, and what known chemicals may inhibit said pathways. One of ordinary skill in the art would have been aware that several methods could be utilized in order to prevent metabolisms, including inhibitors and temperature reduction, in order to avoid treatment of non-treatment sites.

New Rejections

Claim Rejections - 35 USC § 103

1. Claims 44 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,050,990 to Tankovich et al. in view of US Patent No. 5,709,654 to Klatz et al. as applied to claims 15 and 2 above respectfully.

Applicant Claims

Applicant claims maintaining a portion of the treatment site at 25-40 degrees C during irradiation and heating said treatment site to above 25 degrees C.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Tankovich et al. and Klatz et al. are delineated above and incorporated herein. In particular Tankovich et al. teach said treatment site maintained at body temperature (about 33 degrees C) during treatment (col. 63, last paragraph).

Ascertainment of the Difference between Scope the Prior Art and the Claims (MPEP §2141.012)

The differences between the prior art and the claims are delineated above and incorporated herein.

Finding of Prima Facie Obviousness Rational and Motivation

(MPEP §2142-2143)

Regarding claim 47, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to maintain the temperature of a portion of the treatment site at 25-40 degrees C during irradiation because Tankovich et al. teach that said treatment site remains at body temperature during treatment. Therefore it would have been obvious to maintain said treatment site at 25-40 degrees C.

Regarding claim 44, Tankovich et al. teach said treatment site remaining at body temperature, which means that the body has heated said site to above 25 degrees C. Further, Tankovich et al. teach heating said site to 70 degrees C, as delineated above in the rejection of claim 15.

From the teachings of the reference, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed

invention. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

2. Claims 45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,050,990 to Tankovich et al. in view of US Patent No. 5,709,654 to Klatz et al. as applied to claim 1 above, and further in view of US Patent No. 5,114,973 to Hess et al. and US Patent No. 5,955,490 to Kennedy et al., as applied to claim 23 above.

Applicant Claims

Applicant claims a chemical inhibitor applied for greater than 15 minutes and said inhibitor at a concentration of said inhibitor above 0.1%.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Tankovich et al., Klatz et al., Hess et al., and Kennedy et al. are delineated above and incorporated herein. In particular Kennedy et al. teach that ALA is applied for 4 hours at a concentration of 20% (col. 20, lines 49-54).

Ascertainment of the Difference between Scope the Prior Art and the Claims (MPEP §2141.012)

None of said references teach the application of an inhibitor for greater than 15 minutes as claimed in claim 46. This deficiency in said references is cured by Kennedy et al. Kennedy et al. teach ALA applied for four hours (col. 20, lines 49-54).

Finding of Prima Facie Obviousness Rational and Motivation

(MPEP §2142-2143)

Regarding claim 45, claim 45 is rejected for the same reasoning as claim 23 above.

Regarding claim 46, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the chemical inhibitor of Hess et al. for greater than 15 minutes as taught by Kennedy in order to produce the invention of instant claim 46.

One of ordinary skill in the art would have been motivated to do this because Kennedy et al. teach the application of ALA for four hours, and as stated above one of ordinary skill in the art would have been readily aware that, in addition to the application of ALA, one could also utilize a precursor to ALA, which would need a longer application time in order to metabolize. Also, as discussed above, one of ordinary skill would have been readily aware that inhibitors could be utilized to prevent said metabolism in non-treatment sites. Further, one would have either applied said inhibitor to the surrounding, non-target tissue, or applied said inhibitor with enough time to be absorbed by the tissue (15 minutes is a reasonable time) prior to irradiation. Therefore it would have been obvious to apply a chemical inhibitor for greater than 15 minutes in order to allow the

inhibitor to migrate through said tissue and allow the inhibition of said compounds to take effect.

From the teachings of the reference, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

3. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,050,990 to Tankovich et al. in view of US Patent No. 5,709,654 to Klatz et al., US Patent No. 5,114,973 to Hess et al., and US Patent No. 5,955,490 to Kennedy et al., as applied to claim 23 above, in further view of US Patent No. 5,763,235 to Wantanabe et al.

Applicant Claims

Applicant claims succinlyacetone applied at 0.1%

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of all references are delineated above.

Ascertainment of the Difference between Scope the Prior Art and the Claims (MPEP §2141.012)

None of the cited references teach succinlylacetone applied at 0.1% as claimed in claim24. This deficiency in the above cited art is cured by Watanabe et al. Wantanabe et al. teach the utilization of succinylacetone to inhibit the production of ALA in the living body and that said succinylacetone may need to be utilized in amounts of 3-500 times the amount of ALA produced (col. 1, line 60 to col. 2, line 3). It is noted that succinylacetone and 4,6-dioxoheptanoic acid are synonyms.

Finding of Prima Facie Obviousness Rational and Motivation

(MPEP §2142-2143)

Regarding claim 24, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to utilize the methods of Tankovich et al. with a concentration of succinylacetone at a concentration of 0.1% as taught by Watanabe et al. in order to produce the invention of instant claim 24.

The reasoning for the utilization of a chemical inhibitor to ALA is discuss above and incorporated herein. One of ordinary skill in the art would have been motivated to utilize a 0.1% concentration of succinylacetone because Watanabe et al. teach the utilization of succinylacetone in the living body to inhibit the metabolism of ALA and that the amount of succinylacetone utilized may be from 3-500 times the amount of ALA produced. Watanabe et al. gives a clear definition of how much succinylacetone is required, based on the individuals amount of ALA. One of ordinary skill in the art would have seen it obvious to add said amount to a carrier for application and alter the percentage of succinylacetone in said composition as desired, while still maintaining the

desired amount of drug administered. Therefore it would have been obvious to utilize a 0.1% concentration of succinylacetone, as taught by Watanabe et al., with the methods of Tankovich et al. in order to prevent the metabolism of ALA in the living body.

From the teachings of the reference, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Conclusion

Claims 35-43 have been canceled.

Claims 1-34 and 44-47 are rejected.

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUKE E. KARPINSKI whose telephone number is (571)270-3501. The examiner can normally be reached on Monday Friday 9-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LEK

/Mina Haghighatian/
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